HEALTH IN THE UNITED KINGDOM DEPENDENCIES

CENTRAL OFFICE OF INFORMATION REFERENCE PAMPHLET

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LONDON
HER MAJESTY'S STATIONERY OFFICE
PRICE 2s. 0d. NET

Prepared by

REFERENCE DIVISION

CENTRAL OFFICE OF INFORMATION

LONDON, W.I

November 1955

N.B. *This pamphlet is one of a series produced by the Central Office of Information for the Overseas Information Services. To meet requests from inquirers in the United Kingdom, certain pamphlets in the series are being made available on sale from Her Majesty's Stationery Office*

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INTRODUCTION

'The central purpose of British Colonial policy . . . is to guide the Colonial territories to responsible self-government within the Commonwealth in conditions that ensure to the people concerned both a fair standard of living and freedom from oppression from any quarter.'[1] A vital factor in the implementation of this purpose is the improvement of health throughout the United Kingdom dependencies. Much progress has been made, details of which will be found in this pamphlet, but much still remains to be done.

The dependencies are geographically, economically and socially so diverse that few generalizations can be made about their health problems that will hold good for them all. Where rich natural resources are being developed, as in West Africa, Northern Rhodesia and Malaya, social provision can proceed at a much faster rate than in the less endowed or less developed areas, particularly in Africa (where four-fifths of the total population of the dependencies live). Most of the dependencies lie within the tropics and this fact increases the extent of the health problem, even in territories more richly endowed in natural resources than others.

The health problem in the dependencies was recently summarized thus:

'It is difficult for those who have no personal experience of Colonial territories to grasp what an enormous task faces Colonial medical departments in their endeavour to raise the standard of health of the Colonial peoples in their care. Many of these are still primitive and illiterate and unable on their own to get the better of the famine, drought, poverty and pestilence which surround them. Tropical diseases are widespread: malaria, sleeping sickness, filariasis, helminthiasis, yellow fever, yaws, the dysenteries, leprosy. Besides these so-called tropical diseases there are tuberculosis, venereal disease and malnutrition. The process of badly controlled urbanization has further complicated the public health problem. On the clinical side all the diseases commonly met with in the United Kingdom may also have to be catered for.'[2]

It should also be remembered that it is only comparatively recently that public health measures have been introduced, even in advanced countries of the world. Compulsory and comprehensive environmental health services were not developed in the United Kingdom until the second half of the nineteenth century and child welfare services were established there only in the twentieth century. The twentieth century, also, saw the establishment of British administration in many of the dependencies, including the most backward. Thus, it is only in the present century that the full-scale challenge of raising health standards in the largely tropical and underdeveloped territories for which the United Kingdom is responsible has had to be met. Moreover, in by far the greater part of the dependencies, particularly in Africa, there was no sound medical practice on which British administration could build; in these cases Colonial governments had to take on the whole responsibility, with only such foundations as pioneering missions had laid.

[1] *The Colonial Empire* (1947–1948), June 1948, Cmd. 7433.
[2] *Appointments in Her Majesty's Oversea Civil Service*, HMSO, 1955.

Today there are highly developed public health organizations in the more developed territories and in most centres of population throughout the dependencies. The attack on disease meets its greatest problems in the rural areas and especially in the rural areas of the poorer territories. Here the handicaps are economic—due to the relatively low income per head of the population; physical—due to sparse populations and irregular settlement over large areas; and educational—due to lack of knowledge of proper hygiene among the population. The attack on ill health thus takes its place in the general effort to improve the physical and social environment in all its aspects and is related to all the other programmes for economic and social development being undertaken in the dependencies.

Progress during the last 20 years has been appreciable and in some instances remarkable. A large measure of control has been established over many of the diseases, particularly those peculiar to tropical countries, which have caused high morbidity and mortality rates in the Colonial territories.[1] In this control antibiotics and other drugs and insecticides have played a prominent part. Malaria is no longer the terrible scourge it once was, although its effects, especially in Africa, are still serious. The malaria campaigns in British Guiana, Cyprus and Mauritius were in large part responsible for the encouraging recent improvements in health. Yellow fever, once a great killer, is now largely reduced to a few sporadic cases among people who have not been inoculated. Smallpox now seldom reaches epidemic proportions. The incidence of trypanosomiasis (sleeping sickness), which is a particularly serious problem in Nigeria, has been much reduced by special area clearance measures. The treatment of leprosy has been revolutionized by the use of drugs developed during and since the second world war.

The work of control of epidemic and endemic diseases has brought into clearer perspective the amount of ill health due to poverty, ignorance and malnutrition which exists in many dependencies. Tuberculosis, an urban disease, is now one of the greatest causes of sickness and death, and large-scale BCG vaccination campaigns have been undertaken, among other places, in the Eastern dependencies, the Caribbean and Aden. Much research is being undertaken on nutrition and nutritional deficiency diseases and its practical application is steadily improving the quality of diets.

Throughout the dependencies there has been an expansion of medical facilities and a steep rise in health expenditure by governments to provide these facilities.[2] An important part in financing increased expenditures is played by grants under the United Kingdom Colonial Development and Welfare Acts. Grants from this source for medical and health services between 1946 and 1955 totalled just under £17 million, some £3 million of this total being for the year 1954–55. Grants for work on nutrition for the period 1946–55 amounted to over £173,000.

As a result of improved health and the concomitant decline in death rates (including, perhaps even more significant, infant mortality rates), populations and life expectation are increasing everywhere in the Colonial territories.[3]

[1]See *Statistical Appendix* (p. 32), Table I.
[2]See *Statistical Appendix* (p. 33), Table II.
[3]See *Statistical Appendix* (pp. 33–35), Tables III, IV, and V.

Such increases necessarily involve greatly increased pressure on existing medical facilities. In Singapore, for example, annual out-patient attendances at the main hospitals has now risen to almost one million, compared with 90,000 in 1938. In Kenya out-patients at Government hospitals in 1953 numbered over one million compared with 460,000 in 1937. This popularity of the health services, although at times embarrassing, provides an indication of the growing confidence being placed in them in recent years and is an important contributory factor to the striking improvement in health statistics.

HEALTH POLICY

For many years health policy in the Colonies remained primarily curative. When preventive medicine was first introduced, most attention was given to such environmental causes of disease as insect carriers and the pollution of drinking water. Only comparatively recently has it become possible to turn attention to other important sources of ill health such as conditions conducive to tuberculosis, which in dense communities is now by far the most serious clinical and public health problem, and malnutrition. More and more importance is now being attached to preventive medicine; it is becoming generally recognized that the planning of public health policy must be closely co-ordinated with all the other governmental activities which affect the physical and social environment.

These changes are reflected in the summary of medical policy in the Colonies contained in the introduction to a report on the training of nurses for the Colonies, published in August 1945.[1] The report points out that in the individual Colonial territories 'the problems of public health differ to some extent but the fundamental needs are everywhere the same and medical policy aims at securing the benefits of the knowledge of modern medicine for the largest possible numbers of the population'. The report continues:

'The medical services are now generally regarded as part of a co-operative effort for improving the well-being of the community. In this effort all bodies and organizations, both official and unofficial, which share the common aim and are competent to assist in achieving it, should play their part. It is now accepted, therefore, not only that there should be the closest co-operation between the Government medical departments and the medical services provided by local authorities, commercial organizations and voluntary bodies, but that there should be intimate collaboration between medical workers on the one side and the staff of the Administrative Service and of such departments as Education, Agriculture, and Veterinary Services on the other. In the general plans for social welfare, drawn up with due regard to the needs of all sections, urban or rural, of the population, it is clear that very great emphasis should be given to medical work and in particular to its preventive aspect.

'It has been suggested that, great as the need is for hospitals to cure and alleviate disease and also, incidentally, to secure the confidence of the population, in some territories too much stress has been placed in the past on curative services and that the tradition of some Colonial medical departments has been directed more to the cure of disease than to its prevention. Whatever the position may now be in this respect it seems clear that hospital services in most Colonial territories can at present be available only to a small proportion of the people who are suffering from disease or its results; on the other hand, in tropical territories, at any rate, much sickness is preventable. It would appear to follow from this that a primary aim of medical workers in such territories should be to improve health

[1] *Report of the Committee on the Training of Nurses for the Colonies.* Cmd. 6672.

standards and to control the transmission of disease. It is clear that the conditions of most Colonial territories react with especial severity upon the health of mothers and children, and that the successful application of a preventive policy will depend very largely on the care devoted to the health of these classes of the population.'

The improvement of health is thus, as the report quoted points out, part of a co-operative effort to improve general well-being. This effort involves, in addition to public services such as the provision of good water supplies, the improvement of the customary diet, special care for the health of mothers and children and the education of adults in the principles of public health. Agriculture and veterinary departments play their part by encouraging the production of a greater variety of crops and the improvement of stock, the forestry department is concerned with the protection of forests on which water storage and soil fertility depend, and the labour department seeks to ensure suitable rations and housing conditions at centres of employment.

THE CONTROL OF COMMUNICABLE DISEASES

Most of the diseases which are present in the dependencies can be classified under the method by which the infection is transmitted. The main groups are:

(1) *Contagious diseases*, caused by direct contact between bodies, either by parasites[1] on the skin surface or venereally.

(2) *Airborne diseases.* A parasite present in the nose, mouth or lungs may be expelled into the air with minute droplets of saliva or mucus and be inhaled by another person. Diseases in this group include tuberculosis, plague and smallpox.

(3) *Water-borne or food-borne diseases.* These are diseases caused by intestinal parasites which are passed in the faeces and are either allowed to contaminate water or food or exposed to flies which feed on them and then alight on human food. Typhoid, cholera and bacillary dysentery are among the diseases in this group.

(4) *Insect-borne diseases.* If parasites are present in the blood or tissues they cannot be transmitted unless some agent (an insect) pierces the skin, removes blood or tissue containing the parasites and infects them into another person or animal. Diseases so transmitted include malaria, yellow fever and onchocerciasis.

This classification is not exhaustive. In hookworm, for example, parasitic worm eggs are passed out in the faeces, hatch in warm moist shaded soil and develop into larvae which can penetrate human skin. Thus hookworm is particularly dangerous in communities where shoes are not normally worn.

The control of contagious diseases necessitates the isolation and treatment of patients. The control of airborne diseases can be attempted by regulations for the isolation of patients and for the proper ventilation of buildings, but no regulations can prevent the public dissemination of parasites from the throats of infected persons before the disease has been diagnosed in them. Methods employed in the control of water- and food-borne diseases include the supervision of foodstuffs and the careful disposal of faeces and refuse; vaccination is undertaken where appropriate, as in typhoid and cholera. The attack on insect-borne diseases is two-pronged, involving measures, of large-scale application, directed against the insect vectors, and the drug treatment of people with the disease or exposed to infection.

The campaign against a disease usually has three stages:

(1) The incidence of the disease is determined by an examination of the inhabitants of a given area, and treatment is provided for those infected.

(2) When the causes of the disease are known, scientific knowledge is applied to their removal.

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[1]The parasites concerned in tropical diseases may be grouped as worms, protozoa (single animal cells), plants (fungi or bacteria) and those of doubtful status (rickettsiae and viruses).

(3) A campaign is carried out to acquaint people (by lectures, films,[1] posters and the like) with the causes of the disease and the methods of avoiding infection.

There has been enormous progress in the control of tropical diseases in the twentieth century. At the turn of the century, Ross's discovery of the cause of malaria was recent, and the causes of many of the other major tropical diseases had not yet been identified; and, with the exception of quinine, there was hardly a single effective remedy for any one of them. Now, with the use of new drugs and insecticides (the development of which was considerably stimulated by the second world war) and greatly increased resources and organization, many of the great killing diseases have been brought under control and in some cases apparently eradicated. The campaign against others, as for example, sleeping sickness, involves a high order of scientific and administrative organization, including such projects as the clearing of extensive areas of bush, the movement of populations and animals, and housing and resettlement. The mass prevention and treatment of widespread debilitating diseases such as hookworm and yaws have demanded planned surveys and teamwork on a considerable scale.

SOME MAJOR DISEASES

The following is a summary of some of the developments in the campaign against some of the major diseases encountered in the dependencies. The list is by no means comprehensive but is intended to indicate the kind of work being undertaken in the eradication of disease.

Malaria[2]

Since Sir Ronald Ross's discovery, in 1898, that malaria was caused by a parasite carried by the female anopheline mosquito, and the pioneer control work of Sir Malcolm Watson and others in Malaya which followed this discovery, much progress has been made in the campaign against malaria; the disease remains, however, a major public health problem in tropical countries. Apart from causing a large number of deaths, malaria also engenders conditions of ill health and debility which lower resistance to other diseases.

Countries in which malaria is endemic have widely differing conditions, and methods of combating the disease and its vectors which are effective in one locality or community may be quite unsuitable or impracticable in another. There is thus no single formula, and control methods suited to the different environmental factors may consist in the use of drugs to ward off the disease (prophylaxis); control of mosquito breeding by drainage of swamps or by larvicides; reduction of the adult anopheline density by residual insecticide spraying; or a combination of all these. The second world war stimulated advances in both prophylactic drugs and insecticides, and of the former, chloroquine is now recognized as the most powerful

[1]For information on the use of films in such campaigns see COI Reference paper R.3161 of October 1955, *The Instructional Film in the United Kingdom Dependencies.*

[2]For a fuller account see COI Reference paper R.2468 of September 1952, *Malaria Control in the United Kingdom Dependencies.*

agent for the treatment and suppression of the disease, while the British drug paludrine is also important. DDT, first synthesized by a German scientist in 1874, was used for the destruction of mosquitoes both from the ground and from aircraft in the South-East Asian and Pacific war theatres, and Gammexane was evolved by British chemists in response to war requirements; both insecticides and others more recently introduced have transformed the possibilities of malaria control.

The method of eradicating the mosquito by control of breeding has been successful in freeing Cyprus completely from the mosquito carrier and no new case of malaria has been reported there since the end of the campaign in 1949; malaria cases in Cyprus in 1946 had totalled 4,500. Mosquito control by destruction of adult mosquitoes has reduced the number of cases in British Guiana to small proportions and regular treatment now affords protection to virtually the whole population. In Mauritius a campaign involving the internal spraying of all houses and buildings on the island with DDT and Gammexane has eradicated the main mosquito carrier; malaria has ceased to be a public health problem in the Colony. In Malaya the widespread use of prophylactic drugs has had some success, but the fact that in 1954 the total number of deaths from malaria fell below 1,000 for the first time in the history of Malaya was attributable rather to the house spraying, which is giving protection to over half a million people in the rural areas alone. In Trinidad nearly 90,000 houses were sprayed in 1954 and the death rate from malaria is falling steadily. In Sarawak an anti-malarial project, sponsored by the World Health Organization and now being extended to other areas, led to the virtual disappearance of malaria from areas where it was formerly endemic.

The greatest challenges remain in the hyper-endemic areas of tropical Africa. In Nigeria, for example, malaria is considered to be the greatest single factor influencing the high mortality rate and there is evidence to suggest that malaria control might reduce infant mortality by a third. Up to date, efforts in Nigeria have been mainly concentrated on the destruction of the potential breeding places of malaria-carrying mosquito larvae. In all urban areas water-storage places are oiled, and in certain areas large-scale drainage schemes have been carried out. In Lagos a drainage scheme financed by a United Kingdom Colonial Development and Welfare grant of £162,000 was initiated in 1942 and some 12,000 acres have been brought under control. Since 1949 an experimental pilot project has been in operation in Ilaro, in the Western Region of Nigeria, and in 1954 a large-scale experiment was begun in the Northern Region. In the latter scheme control is being attempted in an area of 600 square miles, containing a population of 124,000; the experiment is based on residual spraying and already 80,000 huts have been sprayed. The ultimate result will be of immense importance in the campaign against malaria in hyper-endemic areas.

Leprosy[1]

Leprosy is a disease encountered today mainly in tropical countries and is to be found in some degree in most of the dependencies, Nigeria being

[1]For a fuller account see COI Reference paper R.3002 of February 1955, *The Fight Against Leprosy in the United Kingdom Dependencies.*

by far the most seriously affected. Even today, although improved living standards and modern methods of treatment have decreased the incidence of the disease, some seven million people throughout the world are thought to be infected, including a million in the UK dependencies. In some areas in Nigeria it is estimated that as many as 60 per 1,000 of the population suffer from the disease and that throughout the country there are some half a million infected persons.

In this century, and particularly since the second world war, attitudes to and treatment of the disease have been transformed. The physical suffering and social ostracism which used to be the lot of those infected is giving way rapidly to optimism about its ultimate eradication. With the help of the sulphone drugs, which constitute a major revolution in the treatment of leprosy, it is possible to cure the disease and prevent disfigurement. It is now believed that only about a quarter of all cases are infective and that the remainder, although requiring treatment, do not necessitate isolation. The incidence of the disease can be reduced by isolating the small number of infective cases only, and particularly by safeguarding children from contact with infection. Leprosaria are thus no longer places of despair.

For a long time leprosy relief work was entirely in the hands of missionary societies, but in recent decades missionary efforts have been supplemented by Colonial medical departments and by the British Empire Leprosy Relief Association (BELRA). BELRA was founded in 1924 and is financed by private donations and subscriptions, in addition to receiving small grants from Colonial Governments. Its work includes the supply of latest information and drugs to leprosy workers, the training of doctors and others in the treatment and control of the disease and the carrying out of research and investigation in different countries. Financial aid for leprosy work has been given from United Kingdom Colonial Development and Welfare funds.

Nigeria, where the problem is greatest, provides a good example of the vigour with which leprosy is being tackled. Control and relief measures are carried out by the Central Government (through the Nigeria Leprosy Service), by BELRA, by missions and by native administrations, and these agencies have between them built up a comprehensive organization covering the whole territory. By 1952, 135 treatment clinics and 125 segregation villages had been established under Government auspices. The majority of cases in Nigeria are being treated as out-patients, a system adopted with the object of making scientific treatment available at all Government, mission and native administration medical units. At present 40,000 patients are under treatment in this way. In the Eastern Region, which used to be one of the most heavily infected areas in the country, about 25,000 patients are now receiving treatment with dapsone (one of the sulphone drugs) and, in 1953, 5,000 were discharged as free of symptoms, a proportion which would have been inconceivable a few years earlier. The United Nations Children's Fund (UNICEF) is now providing all the dapsone the Region requires, and the money thus saved is being used to extend control work and treatment facilities.

The problem of leprosy is not as great in East as in West Africa, though recent surveys in the area have indicated that there are as many as 100,000 active cases in Tanganyika and over 80,000 in Uganda. No leprosy service

similar to that in Nigeria has yet been established, but a nucleus exists in the Inter-territorial Leprologist on the staff of the East Africa High Commission (see p. 29), a number of full-time medical officers in charge of leprosy work, medical missionaries and many BELRA lay workers and nurses. The Inter-territorial Leprologist completed a comprehensive survey of leprosy in both East and Central African territories in 1951 and, as a result, measures for treatment and control have been intensified. In Kenya in-patient treatment is given chiefly in the leprosarium at Itesio, where 350 patients were accommodated at the end of 1953 and which also treats nearly 5,000 out-patients. Itesio has been selected as the site of the first leprosy research centre in East Africa, for which BELRA is bearing liability for the capital cost of approximately £20,000 in addition to contributing £4,000 a year for five years towards recurrent expenditure. In Tanganyika, as in Nigeria, the practice is now to give out-patient treatment wherever possible. In 1953 there were about 4,800 patients in the territory's 17 leprosaria; one of the largest leprosy settlements in Tanganyika, at Makete, houses about 1,000 patients and is staffed by the Government and BELRA. In Uganda the African local authorities are taking an active interest in village settlements.

In addition to leprosy work in the African dependencies, much is being done also in the Eastern dependencies, the British Caribbean and the Western Pacific. In the Western Pacific the principal leprosy settlement is on the island of Makogai, one of the most beautiful in the Fijian island group. Makogai serves the dependencies of New Zealand and the United States as well as those of the United Kingdom.

Trypanosomiasis[1]

Trypanosomiasis, or sleeping sickness, is one of the many diseases over which mastery is being obtained. A disease which formerly decimated African villages and caused dangerously decreased food production has now been reduced to manageable proportions, while earlier diagnosis and more effective treatment have succeeded in lowering the death rate to a relatively small figure. Progress has stemmed largely from the pioneer work of David Bruce in Uganda in the early years of this century, when he discovered, after numerous experiments, that sleeping sickness in man and nagana in cattle were caused by similar parasites—trypanosomes introduced into the bloodstream by the bite of infected tsetse flies; and from the work of C. F. M. Swynnerton in Tanganyika in the 20 years before his death in 1938. Swynnerton discovered that certain deadly types of tsetse could not live permanently in dense, continuous thicket, or in the open. He therefore divided the fly-infested belts by long corridors which the fly could not pass and then progressively cleared the fly from the separate blocks. The best method of doing this proved to be burning their breeding places or growing such thick vegetation that the tsetse could not live in it. As a result of the efforts of Swynnerton and his assistants the tsetse fly was driven out of 15,000 square miles of Tanganyika and the land thus reclaimed put under cultivation.

[1]For a fuller account see COI Reference paper R.3248 of January 1956, *The Fight Against the Tsetse Fly in the British African Dependencies.*

The experience gained in Tanganyika was applied in the village resettlement scheme at Anchau in what is now the Northern Region of Nigeria. The market town of Anchau, whose population was ravaged by sleeping sickness, was selected by the Nigerian Sleeping Sickness Control Branch in 1937 as the site for a large-scale experiment in the control of the disease. Subsequently a tsetse-free corridor 70 miles long and 700 square miles in area was created, and within ten years the population had been resettled in villages in the corridor with improved water supplies, village hygiene and agricultural methods.

Sleeping sickness control by clearance and resettlement provides an excellent example of inter-departmental co-operation. Medical and veterinary activities are supplemented by those of agriculturists, foresters and engineers in bush clearance, soil conservation, agricultural development, irrigation and the provision of housing and water supplies. The resettlement of populations involves the services of administrative, educational and welfare workers.

Clearance schemes have been extended to other areas, and especially in Nigeria, since the successful Anchau experiment. Work has also proceeded with the eradication of tsetse by the use of insecticides and by the destruction of game harbouring trypanosomes.

In Nigeria treatment is legally compulsory. It is provided by teams of trained workers who, upon entering a new area, make a survey of the population and give a full course of treatment. The work of the sleeping sickness teams has now been extended to include the treatment of other epidemic diseases. During the years 1931–40 over three million people in Nigeria were examined and nearly 400,000 cases of sleeping sickness treated; in the period from 1946–52 five and a half million examinations were made and over 70,000 cases treated. The number of cases treated in 1952 was 7,000, the lowest for 20 years and a contrast to the peak figure of 90,000 during the worst year on record. In the Northern Region of Nigeria there were over 16,000 reported cases of sleeping sickness in 1946, and this figure had decreased to 6,060 in 1953.

Research into the disease is organized in both East and West Africa on a regional basis (see pp. 28–29). The epidemiology of the disease in West Africa has been completed and recent findings have confirmed that the drug known as pentamidine, given at six to twelve months' interval, is a safe and efficient means of prophylaxis in areas where tsetse cannot be eradicated.

Yellow Fever

Yellow fever is found in some districts of Africa, the West Indies, South America and in a few other parts of the world. As the disease is localized, international regulations exist to prevent its spread—especially by aircraft—to other parts free from it. It is mosquito-borne and many of the measures taken against malaria are applicable also to the insect transmitting yellow fever. In Freetown, Sierra Leone, where yellow fever used to be prevalent, few cases have occurred since the introduction of a piped water supply. DDT has been used extensively to destroy the disease vector. Prophylaxis

has progressed side by side with measures for the destruction of the vector, and several effective vaccines have been produced. Much of this work has been undertaken by the Rockefeller Foundation (see p. 30), in co-operation with the Colonial Office, at the Research Institutes in Uganda and Nigeria. As a result of this progress, yellow fever now seldom reaches epidemic proportions and is virtually confined to sporadic cases among unvaccinated persons. The two serious yellow fever epidemics which have occurred since the second world war were both in Nigeria. The first, in 1946, was brought to an end after 400,000 inoculations and the extensive use of DDT; the second, in November 1951, was brought under control early in 1952 after an intensive vaccination campaign, and no further case has been reported in the area affected. There were some cases of yellow fever in Trinidad in 1954, as a result of which extensive measures of vaccination and mosquito control have been introduced; up to that time the last outbreak of yellow fever in the British Caribbean had occurred in British Honduras in 1921.

Yaws

This disfiguring skin disease is prevalent in many of the dependencies and often attacks children. Health authorities have been handicapped by lack of precise knowledge of the epidemiology of the disease, since the fundamental factors which influence its regional incidence have not yet been scientifically ascertained. However, investigations have tended to show that the germs (spirochaete) that cause both syphilis and yaws are structurally identical, although yaws is not a venereal disease. Yaws is spread mainly by contact with infected persons (the spirochaete entering only through broken skin), but it seems possible that the spirochaete can remain alive on the floors of native huts and also that there may be an insect vector.

With the introduction of modern hygiene and sanitation, yaws is fast disappearing from closely settled areas. It is still prevalent in rural areas, where, however, special treatment campaigns employing modern drugs and antibiotics, and treatment provided both by mobile and static rural health units, are having marked success. In the Eastern Region of Nigeria, for example, some 265,000 people were examined in 1954 and the 70 per cent found with past or present infections were treated; the careful follow-up system associated with this campaign has established that, of 80,000 people re-examined, only 10·15 per cent showed signs of recurrence or reinfection. In the British Solomon Islands pilot schemes have prepared the way for an intensive drive against the disease when funds become available.

Venereal Diseases

Venereal diseases are not, of course, confined to the dependencies, nor to the tropics. But in the less developed areas the problem of treatment is increased by difficulties in communications and in following up results among scattered and often transient people. More widespread and effective treatment has been made possible by the use of sulphonamides and antibiotics of the penicillin group, but venereal disease is essentially a social problem and the long-term solution is largely educational. This long-term preventive aspect is not being neglected in the dependencies but it cannot

be claimed that statistically significant results have been achieved so far.

Among examples of the kind of work being undertaken in places with a high population density are the Caribbean Medical Centre in Trinidad, which combines treatment with training of staff and a base for field clinics, and the special centres in Hong Kong and Singapore. The successful campaign in Seychelles, inaugurated in 1952, is a striking example of what can be done in a small territory; no fresh case of syphilis was observed there in 1954. In Northern Rhodesia a carefully organized system of treatment under the direction of a full-time specialist, with a follow-up by laboratory tests, has been developed in selected rural areas and is proving popular and effective. In Somaliland a venereal diseases clinic for women has been established. In the small towns and rural areas generally, however, treatment by modern methods is mainly in the hospitals and by rural health personnel.

Tuberculosis

Tuberculosis is now perhaps the greatest socio-medical problem in the UK dependencies. In the absence of specific drugs or rapidly effective preventive measures the conquest of the disease is likely to be slow and costly. In Africa, where formerly the infection rate was relatively low in the more remote areas, the increasing movement of population to urban and industrial centres has extended the risk of infection. An extreme example of the seriousness of the problem in dense communities is provided by Hong Kong, where in 1954 notifications amounted to 12,500 and deaths to 2,876, compared with 11,900 and 2,939 respectively in 1953. The Hong Kong Medical Department operates two large clinics where in 1954 attendances totalled over 218,000. On the other hand, successes have been recorded. Virtually total control of the disease has been achieved in Bermuda; in Aden the tuberculosis mortality rate was reduced by just over 50 per cent between 1948 and 1951. In Cyprus in 1954 there were for the first time empty beds in the sanatorium owing to the shortening of patients' stay there by the use of modern drugs and antibiotics.

Departmental work has been greatly assisted by voluntary organizations. Of these, the National Association for the Prevention of Tuberculosis, in the United Kingdom, does work of the greatest importance. Besides arranging periodical international conferences, the Association awards scholarships to enable medical workers from the dependencies to go to the United Kingdom to study the disease; it has also published a general survey of tuberculosis in independent and dependent countries of the Commonwealth and has conducted detailed sociological and clinical surveys of the disease in the West Indies and Cyprus. In addition local anti-tuberculosis associations have been formed in many territories and these are active in raising funds and maintaining public interest.

There are three elements in the attack on tuberculosis. The first is the improvement of individual and community hygiene, combined with improved housing conditions; the second, preliminary testing followed by the preventive vaccination with BCG vaccine of persons found susceptible to the disease; and the third, curative treatment in clinics and hospitals. The first element is long-term and does not admit of rapid progress but it is naturally of fundamental importance.

BCG vaccination campaigns have been carried out in many of the dependencies, often with the assistance of the World Health Organization and the United Nations Children's Fund. In Singapore mass BCG vaccination is now a routine feature of school and rural health work. In Jamaica in 1954 some 637,000 people were tested, and of these nearly 350,000 were vaccinated; the campaign was backed by a mass-radiography survey during which 73,000 were X-rayed. In British Guiana 135,000 were tested in 1954 and 74,000 vaccinated. In 1954, also, 88 per cent of the population of Grenada and 93·3 per cent of the population of the Falkland Islands were examined in the course of surveys.

Hospital facilities vary from territory to territory. In the Federation of Malaya, where some 3,000 beds are available, the ratio of beds to population compares not unfavourably with the United Kingdom. The Lady Templer Tuberculosis Hospital in Kuala Lumpur, which was opened in August 1955, provides a centre for anti-tuberculosis work for the whole of South-East Asia. In Hong Kong and Singapore elaborate clinic and out-patient therapy systems are in operation; the Tan Tock Seng Tuberculosis Hospital in Singapore, which provides 564 beds, and the clinic associated with it, together employ 15 medical officers. In East Africa there is, among other facilities, a well-established centre, completely modernized in 1952, at Kibongoto in Tanganyika, and a chest hospital, opened at Mombasa in Kenya in 1951, which now provides 300 beds for treatment by modern methods. Much of the curative work at the present time is based on general hospitals, and planning, notably in Africa, tends to emphasize the provision of small well-distributed units rather than large central sanatoria.

Diseases Causing Blindness

An inquiry, initiated in 1946 by the Royal National Institute for the Blind and the Colonial Office, revealed that there were over one million blind people in the dependencies. It was estimated that 75 per cent of this blindness was avoidable, for example, by observing simple rules for the care of the eyes, and that a great deal of it could be cured by surgical operations. As a result of this inquiry it was decided to set up a voluntary organization to supervise the work both of preventing and curing blindness and of training blind people. This organization, the British Empire Society for the Blind, has been in operation since the beginning of 1950 and co-operates closely with the Colonial Office, Colonial Governments and voluntary organizations throughout the dependencies.

Two major diseases which can lead to blindness are onchocerciasis and trachoma. Onchocerciasis is caused by a filarial worm transmitted by the bite of species of the *simulium* fly, which breeds in streams and rivers. A British Empire Society survey team, which has been operating in West Africa since 1952, has estimated that of the one million Africans living in the Northern Territories of the Gold Coast, 600,000 are victims of onchocerciasis and of this number 40,000 are blind, constituting a tenth of the blind population of West Africa. Onchocerciasis is a serious and increasing menace in Nigeria and is also prevalent in East Africa, in parts of Kenya and in Uganda (see p. 19). Sufferers have been treated with modern drugs such as hetrazan and suramin, but, as with malaria, the chief hope lies in prevention

through the control of breeding, and DDT has been used extensively on the riverine breeding places of the *simulium* fly.

Trachoma is even more serious than onchocerciasis in its total effect and is regarded by many authorities as the greatest single cause of blindness and poor sight. It is a type of conjunctivitis which is highly contagious and is due to a virus transmitted through the bodies of lice; the disease causes corneal ulcers and scars and, at worst, total blindness. A survey being conducted by the Kenya branch of the British Empire Society for the Blind has confirmed that trachoma is the most widespread disease in Kenya, as it is in the whole of East Africa (where there are estimated to be at least 120,000 blind people). The incidence of the disease is about 70 per cent among the Wakamba tribe of Kenya, 80 per cent among the Kikuyu and almost 100 per cent among the Suk. A travelling clinic in 1954 restored sight by surgical operations to 300 of Kenya's blind population of 35,000. Another survey is being carried out in the Eastern Aden Protectorate and has found trachoma to be the outstanding cause of blindness there.

The report of the British Empire Society for the Blind for the year 1954–55 sums up the impressive progress in the medical field since 1950 in these words: 'Surveys to reveal the extent and causes of blindness have been conducted in areas containing twenty-four million inhabitants. New eye clinics have been established by Governments in many territories and the number of eye treatments has increased dramatically. International interest has been focused on some of the main causes of tropical blindness, and important research and control measures are now being successfully undertaken'.

No less important is the work being done to promote blind welfare. Of the developments in this field since 1950, the Society's 1954–55 report says: 'In a score of territories, which together contain more than two-thirds of the population of the British Colonial Empire, the foundations have been laid of a permanent system of blind welfare. The number of blind children at school has doubled; the number of blind adults in training has increased ten-fold. Thirty new schools and training centres have been established, six more are being built and an additional eighteen have been planned. Braille alphabets have been devised for practically every written language in the Colonies. Teachers and blind welfare workers have come to the United Kingdom for special training from sixteen different Colonial territories'.

Other Diseases

Hookworm, while not directly the cause of many deaths, is responsible for much debility and ill health. Notable work has been done in controlling the disease by the Rockefeller Foundation (see p. 30), especially in Jamaica from 1931–37. Proper sanitation is the real answer to hookworm, as it is also to typhoid and other enteric diseases. While there have been typhoid outbreaks in recent years, especially in Hong Kong, East Africa and the West Indies, the experience of other territories has shown that personal prophylaxis, improvement of water supplies and other preventive measures are satisfactorily controlling the incidence of enteric diseases. Outbreaks of plague still occur, particularly in East Africa, but treatment of early cases

with antibiotic streptomycin has proved remarkably successful. Smallpox is still endemic in Africa, although it is kept well under control by vaccination campaigns. Tick-borne relapsing fever was once extremely common in the Somaliland Protectorate; no case was reported there in 1953 or 1954, a result achieved by the residual spraying of dwellings with insecticides. Relapsing fever has also long been a problem in Uganda, being spread along the immigrant labour routes. Here, too, the use of insecticidal spraying of individuals, baggage and buildings has greatly reduced the incidence of the disease; in 1949 there were 566 cases of relapsing fever, while in 1954 there were only 26. Insecticidal methods are also being adopted in Kenya and Tanganyika, where relapsing fever is endemic.

SOCIAL AND PREVENTIVE MEDICINE

It is impossible to separate the factors which make for good health from the social environment. 'For a soundly based health policy to succeed, it is imperative to obtain the co-operation not only of local authorities and community leaders, but of the individual at every social level.'[1] Hence, steadily increasing attention is being devoted to programmes of health education, in which the organization and techniques employed vary considerably in different territories. In a few territories, such as Jamaica, Trinidad and Uganda, health education sections exist as separate entities within medical departments. In territories where such units have not yet been formed, efforts are being made to spread the practical application of general health principles through the agency of radio talks, film shows, health demonstrations, personal instruction of mothers at infant and child welfare centres and lectures in schools.

The Bureau of Health Education in Jamaica, which was established from funds provided under the United Kingdom Colonial Development and Welfare Acts, is active in this field; in 1952 the Bureau showed 152 films and issued over 280,000 publications. In Singapore and Hong Kong the social medicine departments exert their influence through the clinics and by publications. In the Gold Coast and Uganda health education has been developed as part of community development projects; in Uganda a senior officer in the Medical Department is responsible not only for the dissemination of information but also for the investigation of the value of various media of health education. In Antigua the annual Homes, Families and Gardens Festival provides an opportunity to spread information about health in the home.

A feature of public health services in recent years has been the development in urban and rural areas of health centres, staffed and equipped to co-ordinate preventive and curative services. In urban areas the tendency has been for such health centres to perform specialized functions as maternity and child welfare centres, chest clinics and venereal disease clinics. In rural areas, on the other hand, health centres fulfil a more comprehensive role, since they have been developed from rural dispensaries by the addition of preventive functions to their hitherto predominantly curative functions. Staffing arrangements at these rural centres vary according to local conditions, but the typical complement is a medical assistant, a sanitary assistant and a midwife.

Some of the rural health centres are fairly elaborate; the Tsun Wan centre in Hong Kong cost £31,250, and the 20 main and subsidiary centres in Singapore deal with 70 per cent of all births in rural areas out of a population of well over 300,000. Other clinics, such as those in Antigua, are virtually all-purpose clinics, holding maternity and child health, venereal disease, dental and leprosy sessions, as well as issuing milk, food yeast and cod-liver oil. In Nyasaland the policy is to encourage visits by the staff to villagers'

[1] *The Colonial Territories* 1954–55, June 1955. Cmd. 9489.

homes over a wide area, with the object of demonstrating to the villagers how they themselves can prevent many of the prevalent causes of ill health. In British Honduras nine health centres have been completed, and eight centres are being established in different states of the Federation of Malaya as a pilot scheme to furnish the experience which will form the basis for further expansion. It is the policy of the Ministry of Health in the Eastern Region of Nigeria to encourage local government authorities to take over responsibility for local services, and one such authority has already approved a capital expenditure of £17,000 to build five new rural health centres.

By no means all health units are static. In the Gold Coast and Nigeria mobile field units are responsible for a great deal of preventive health work and also for morbidity surveys. In British Guiana the Mobile River Dispensary Service has eight dispensary vessels, and in Sarawak there are 16 such vessels. Trials carried out with mobile health centres in British Honduras have been very successful; in North Borneo a motor travelling dispensary operates from Jesselton. For isolated farms in the Falkland Islands the Government air service, which can be contacted by radio-telephone, provides medical transport and air ambulances when needed. Similar services exist in British Guiana and the Bahamas. In the Aden Protectorate health services are largely rural. There are now five hospitals and 54 health units in Aden, and mobile sanitation units are available to visit localities seriously affected with endemic or epidemic disease.

Much attention is paid in all health work to the care of mothers and children. This, for the most part, is regarded as an integral part of public health generally, rather than as the responsibility of a specialized branch of the medical department. In all territories attendances at maternity and child welfare clinics are increasing, and the work of health visitors and home midwives is rapidly expanding. In Hong Kong, where the already extensive maternal and child health services have been reinforced by a World Health Organization team, there are now 18 fully operating clinics with associated home services. The infant mortality rate in Hong Kong, now 72·4 per 1,000, shows a continuing downward trend, due to the services available and the fact that all deliveries are conducted either in hospital or by general practitioners. In Singapore, where deliveries in some hospitals have reached an annual rate of 90 cases per bed, a system has been worked out by which a normal case is discharged 24 hours after delivery and subsequently cared for by an after-care service consisting of midwives working under the supervision of a nursing sister. In Sierra Leone the Government has taken over the Princess Christian Mission Hospital in order to develop it as a paediatric and maternity unit, which will also be a base for the home midwives service and a training centre for midwives and health visitors.

In most dependencies the health of school children is part of the general responsibility of medical officers, but in some there is a specially constituted schools' medical service. Shortage of staff and inaccessibility of the schools often preclude systematic medical examination of school children, but this is carried out wherever possible. In British Guiana over 12,300 school children were given a preliminary examination by school nurses in 1954, and, of this number, 2,184 were referred to the Schools' Medical Officer for

detailed examination. Nutritional work (see p. 20) is of great importance in the health of school children. The criteria for assessing under-nourishment among children vary from territory to territory but, among groups of children examined between 1946 and 1948, under-nourishment was found in some 25 per cent in British Honduras and 45–55 per cent in Zanzibar, Jamaica and the Bahamas. To remedy such situations, a free school-feeding service providing essential dietetic supplements is operated in many territories. In British Honduras, for example, 33 per cent of all school children are given a daily issue of milk, margarine and fortified biscuits during term-time. Wherever possible, the needy or under-nourished child is also cared for by home visits from a health visitor or school nurse.

An important factor affecting health policy is increased industrialization with its concomitants of labour migration and the creation of new urban centres. This development has particularly serious implications for health in territories where tropical diseases are endemic and where local customs have not yet been fully adapted to the new conditions. So far, however, careful planning of health services has averted any serious complication. It is common practice for employers of labour to make arrangements for the health and medical care of their employees, under conditions acceptable to the Governments concerned. There was no major health incident during the construction work on the new oil refinery at Aden. The construction of the Nile dam at Jinja in Uganda was completed with an exceptionally low sickness rate among the labour force employed; measures have included a large-scale attack on the larvae of the insect vector of onchocerciasis, resulting in the disappearance of the flies for a period of three months. In connection with the Volta River scheme in the Gold Coast, a preliminary entomological survey of the whole area provided the Department of Health with invaluable information; the health aspects of the scheme are being continuously watched. In the industrial health field, the Silicosis Bureau at Kitwe in the Northern Rhodesia copperbelt is one of the best organized and equipped units of its kind in the world.

NUTRITION

'The guiding principle in the work taking place on colonial nutrition is the need both for investigations to obtain a better understanding of present-day Colonial diets and of their relation to health and disease, and for active measures to teach and apply existing knowledge in order that Colonial peoples may attain a better and more balanced level of feeding.'[1]

In 1936 the then Secretary of State for the Colonies requested all Colonial Governments to submit reports on the standard of nutrition in their territories, and subsequently these reports were studied by a committee of experts, which published its report and recommendations in 1939.[2] The committee found that the dietaries in Colonial territories were, with some exceptions, predominantly vegetarian and that relatively small quantities of animal products were consumed. The carbohydrate content was high and the fat, protein and vitamin content low. Few of the constituents found necessary in Europe for a nutritionally adequate diet were generally present in the diets in the Colonial territories, and these lacked variety and protective value as well as being frequently insufficient in quantity. The effects of malnutrition were to be seen not only in specific deficiency diseases such as beri-beri, pellagra and kwashiorkor,[3] but also in deficiency states which, while not resulting in manifest disease, prevented the full enjoyment of health.

The main causes of malnutrition in the Colonies were, in the committee's view, the often low standard of living; the existence of great ignorance coupled with prejudice both with regard to diet itself and to the use of land; and the influence of other diseases, particularly those caused by parasites, which reacted upon the individual's nutritional state.

Effective measures to improve nutritional standards in the Colonial territories thus call for combined operations by many departments, and especially those concerned with health and medical services, social welfare, agriculture and education. One of the major functions of the Applied Nutrition Unit, which was set up in London in 1952 as a joint undertaking of the London School of Hygiene and Tropical Medicine and the Colonial Office, is to provide facilities for training Colonial personnel in nutrition work. Its other functions include the study and exchange of information on Colonial nutrition and food technology[4] and the provision of advice and assistance in field work and investigations.

While not itself concerned with fundamental research, the Applied Nutrition Unit has close links with the Medical Research Council's Human Nutrition Research Unit in London and the Field Research Station at Fajara in the Gambia. The staff of the Human Nutrition Research Unit, which was established in 1944, is mainly engaged in working out improved techniques for the study of nutritional diseases and food constituents. The Field Research Station at Fajara, set up in 1947–48, provides a centre in tropical

[1] *The Colonial Territories* (1949–50), May 1950. Cmd. 7954.
[2] *Nutrition in the Colonial Empire*, 1939. Cmd. 6050, 6051.
[3] A disease in children probably due to a protein deficiency.
[4] This covers techniques for the preparation, processing, perservation, storage, handling and transport of food, including milling, enrichment, extracting and drying.

conditions both for research work and for training in field investigations directly related to the practical problems to be encountered in the dependencies.

Primarily with a view to improving Colonial diets, the United Kingdom Government decided in 1944 to set up in Jamaica a factory to manufacture food yeast under a company known as Colonial Food Yeast, Ltd. Food yeast provides in a balanced form both proteins and vitamins of the B group, which are important and common deficiencies in Colonial diets; molasses, one of the necessary raw materials of food yeast, are available in abundance in Jamaica. The Jamaica factory is now supplying food yeast to many of the dependencies and the value of this food supplement, especially in school and institutional feeding, is now widely recognized.

A development of great importance since the second world war has been the organization, recommended by the Nutrition Sub-Committee of the Colonial Medical Research Committee, of field working parties to carry out combined surveys of the health, food consumption and production of a given area as a preliminary to the study of methods for increasing local food production and use. One such Nutrition Field Working Party operated at Geneiri in the Gambia from 1947 to 1951. Survey data on medical, nutritional and agricultural conditions were collected and investigations extended to cover many other aspects of village life. The Field Working Party also carried out experiments in agricultural mechanization, soil conservation, methods of improving living conditions, food storage and domestic water supplies, the use of cleared timber and the introduction of rural industries. Trained African staff of the Working Party took an increasing share in the responsibilities of the work, and co-operation with the village community was good. Surveys and experiments on the lines of the Gambia work have also been carried out in the Federation of Malaya, Northern Rhodesia, Nigeria and other territories.

Nutritional improvements in the individual dependencies depend so closely on the co-operation and initiative of a number of departments that it is difficult to give in a short space a representative picture of activities in this field. Medical departments in many territories arrange supplementary feeding for needy cases among mothers and young children at clinics and emphasize in health and hygiene talks the part which a proper diet plays in the maintenance of good health. Agricultural departments undertake food production schemes and encourage vegetable-growing and school gardening activities. Education departments supervise the teaching of agriculture and domestic science and, with the social welfare and labour departments, make arrangements for the feeding of special groups. Much help is given also by independent organizations, such as Jamaica Welfare Ltd., now the Jamaica Social Welfare Commission. Local materials of high nutritive value such as shark oil and red palm oil, formerly often wasted, are now being used as feeding supplements in a number of territories. To remedy protein deficiencies, increasing use is being made of both sea and freshwater fish, and attention is also being given to the use of vegetable protein. Nutrition committees, or committees whose functions include nutrition, are in operation in several of the dependencies, and nutrition officers have played an important part in carrying out surveys, undertaking nutrition teaching and giving advice on school feeding and other group-catering arrangements.

ORGANIZATION OF HEALTH SERVICES

The health services, like other services in the dependencies, involve the work of organizations in the United Kingdom and in the dependencies themselves, both individually and inter-territorially. In addition, since disease knows no boundaries, international organizations have been established to further the common effort to improve health.

UNITED KINGDOM ORGANIZATIONS

At the Colonial Office, the Secretary of State for the Colonies is advised by a Chief Medical Officer and his staff. A Colonial Medical Advisory Committee keeps in close touch with the services in individual dependencies by examining the annual reports of medical departments, by interviewing medical officers home on leave and in other ways, and makes recommendations on medical policy to the Secretary of State. The Committee was reconstructed in 1952 so as to provide both a forum for the discussion of general medical and health problems affecting the dependencies and a panel of specialist advisers.

Among other official and semi-official bodies are the Colonial Medical Research Committee, the Bureau of Hygiene and Tropical Diseases and the Commonwealth Institute of Entomology.

The Colonial Medical Research Committee was constituted in 1945 by the Secretary of State, jointly with the Medical Research Council. Its terms of reference, as revised in 1953, are to advise the Secretary of State for the Colonies and the Medical Research Council on all matters of medical research in and for the benefit of the Colonies, and in particular regarding

(*a*) medical research in the Colonies financed from United Kingdom Colonial Development and Welfare funds;

(*b*) the promotion of such basic and long-term work as is required to be based on the United Kingdom and the supervision of workers engaged for this purpose;

(*c*) the promotion of work in and for the Colonies by workers in home universities and research organizations.

The main function of the Bureau of Hygiene and Tropical Diseases is to collect and disseminate information regarding hygiene and tropical diseases. It is partly maintained from United Kingdom funds and from funds provided by contributions from other Governments, principally those of other Member countries of the Commonwealth and of individual Colonies; other income is derived from private subscribers and from the sale of its publications. The Commonwealth Institute of Entomology, originally set up in 1913, encourages and co-ordinates entomological work in relation both to human and animal diseases and to agriculture.

Unofficial organizations include the London School of Hygiene and Tropical Medicine[1] and the Liverpool and Edinburgh Schools of Tropical

[1]For an account of the London School of Hygiene and Tropical Medicine and its activities up to 1946, see COI Reference paper R.1461 of August 1947.

Medicine. These schools are of great importance as centres both of research and training. The Liverpool School of Tropical Medicine maintained a laboratory at Freetown in Sierra Leone until it was closed in 1941; the laboratory has now been acquired by the Sierra Leone Government to serve as a medical research centre for West Africa. Another example of the way United Kingdom teaching institutions are helping medical work in the dependencies is the recent agreement by the Imperial College of Science and Technology, London, the University of Durham and the Royal Technical College, Glasgow, to adapt the syllabuses of their post-graduate courses in Public Health to meet the needs of the Colonial territories.

An experimental scheme, establishing a panel of consultants to the Colonial Medical Service, was launched in 1948 with the assistance of a grant of £30,000 from the Nuffield Foundation. It ran for six years and was confined to the African territories. The consultants selected to make visits to these territories represented the more important branches of medicine, surgery, radiology, and gynaecology, and the primary object of the scheme was to keep medical officers in the field abreast of developments in medical and other research in the United Kingdom. Other aims were to provide a stimulus to official and unofficial Colonial medical staffs, particularly those working in isolated posts, and to establish a body of expert opinion in the United Kingdom well informed about conditions and problems in the dependencies. The scheme proved most valuable and provision is being made for its continuance. The cost of future visits to African territories will be met by the African Governments themselves, and it is the intention that the cost of visits to non-African territories will be met from United Kingdom Colonial Development and Welfare funds for an initial period of three years.

COLONIAL MEDICAL DEPARTMENTS

The various medical services, which had previously been separate services attached to the separate territories, were unified in 1934 when the Colonial Medical Service (now the Oversea Medical Service) was established. Sir Charles Jeffries (now a Deputy Under-Secretary of State at the Colonial Office), writing in 1938, summed up the development of Colonial medical departments. 'Until comparatively recent times', Sir Charles writes, 'the function of the medical services in the Colonies was primarily that of "garrison" services which existed mainly for the purpose of looking after the health of Government officials. But during the last thirty or forty years the Medical departments have developed into highly organized State Public Health Services devoted to the prevention and cure of disease and the preservation of health amongst the general population of the Colonies. It must be remembered that in these territories the Governments had, perforce, to undertake tasks which in this country [i.e. the United Kingdom] were carried out by voluntary organizations, by private enterprise, or by local and municipal authorities. In many areas of the Colonial Empire it was the Government alone which was in a position to erect and maintain hospitals and to organize public health activities. Not only this, but in all except a

comparatively few centres, where there were sufficient inducements to private practitioners to establish themselves, there would be no medical attention available for the public were it not for the presence of the Government medical staff.'[1]

The Medical Department of each dependency is administered from a central medical directorate and, through the Director of Medical Services (or the Senior Medical Officer), is responsible to the Governor, or, in dependencies where the Ministerial or Member systems have been introduced, to the Minister or Member concerned. Except in the smaller dependencies medical departments are decentralized into regions and districts. Three main sections are usually included:

(1) the treatment service, which is responsible for hospitals and dispensaries;

(2) the public health service, concerned with general sanitation and preventive measures; and

(3) the laboratory service, which deals with the examination of biological material, water and food and with medico-legal work.

The medical departments of certain territories also include special branches, such as an entomological branch, nutrition units, survey units, and sleeping-sickness teams. Health units, which may be stationary (attached to a hospital or in smaller buildings of their own) or mobile, have also been developed in several of the dependencies (see p. 17).

VOLUNTARY ORGANIZATIONS AND THE MISSIONS

A great deal of medical work in the dependencies would be incomplete without the complementary services rendered by voluntary organizations and missionary bodies. Missions of all denominations were in many instances the pioneers of health services, and they continue to play an important part. Mission hospitals not only cater for the sick but also often undertake the training of auxiliary medical staff, particularly midwives and nurses. In many cases such hospitals are subsidized by Government to perform allotted tasks; in Nigeria, for example, the missions are linked with the Government in the extensive leprosy service there.

Among voluntary organizations working in the health field, the Order of St. John, through the medium of units of the St. John Ambulance Brigade Overseas and the Association, and the British Red Cross provide first aid training and other services, the latter society being particularly helpful in providing amenities for in-patients. The British Empire Leprosy Relief Association (see p. 9) has a traditional interest in the Colonial territories. The New Zealand Leprosy Trust Board with its incorporated branch in Fiji assists leprosy patients in the island territories of the South-West Pacific. The National Association for the Prevention of Tuberculosis (see p. 13) annually provides scholarships enabling selected medical, health and nursing personnel from the Colonial territories to study various aspects of tuberculosis work in the United Kingdom. The British Empire Society for the Blind (see p. 14),

[1]Sir Charles Jeffries, *The Colonial Empire and its Civil Service*. (Cambridge University Press, 1938).

in addition to sponsoring a medical survey of causes of blindness in West Africa, is active in other welfare work to bring relief to the blind. There are also very many instances of public-spirited co-operation and generosity by Rotary Clubs, anti-tuberculosis associations and other voluntary organizations in individual territories.

RECRUITMENT AND TRAINING

There are at present in Colonial medical departments some 800 administrative, public health and clinical posts for officers who hold a qualification registrable in the United Kingdom. Of these about 50 are available to women, mainly, but not exclusively, in maternity, child welfare and school health activities. Medical staffs are supplemented by a large number of nursing sisters, health visitors, health inspectors, pharmacists, laboratory workers and other skilled staff recruited from outside the individual territory and by many locally trained auxiliaries of every grade.

In some Eastern dependencies, especially Hong Kong, Singapore and the Federation of Malaya, the medical services can now be maintained almost entirely by the intake of graduates from the Universities of Hong Kong and Malaya and by men and women of local origin trained in the United Kingdom. Other territories such as the West Indies, Mauritius and Cyprus are also lessening their demands on recruitment from the United Kingdom. In Nigeria, although the Northern Region remains seriously understaffed, the Eastern and Western Regions are becoming practically self-supporting except in the specialist grades. The staffing position elsewhere, however, is much less satisfactory and often recruitment does not keep pace with normal losses.

The Universities of Hong Kong and Malaya and the University Colleges of the West Indies and Ibadan in Nigeria provide medical training of a standard entitling their graduates to registration in the United Kingdom. Makerere College in Uganda grants a medical diploma which carries entitlement to full registration in the East African territories.[1] In addition to those attending these medical schools over 900 students from the dependencies are studying medicine in the United Kingdom and the Irish Republic.

A full complement of 'medical auxiliaries' is essential to the efficient working of medical services, and the training of subordinate medical and health personnel is invariably regarded as a first priority in departmental planning. Systems of training vary according to local requirements, and depend very much upon current educational levels; but training establishments are everywhere being strengthened and there has been a progressive improvement in standards. The basic general grade in East and Central Africa is the 'Medical Assistant', trained to carry out supervisory duties in hospitals and to take charge of rural medical and health units; a similar grade exists elsewhere, though nomenclatures and training systems vary. In addition, subordinate technical staff such as health inspectors, laboratory technicians, radiographers, pharmacists and physiotherapists are being

[1]For details of University and vocational training see COI Reference pamphlet RF.P.2605 of September 1954, *Education in the United Kingdom Dependencies.*

trained to standards which will reduce the dependence on oversea recruitment.

One of the oldest training establishments in the dependencies is the Central Medical School in Suva, Fiji. It was opened in 1886 as a medical school for Fiji; in 1928 it was reorganized as a medical training centre for the British Pacific Islands, and now serves the whole of the Western Pacific, including islands under the administration or trusteeship of Australia, New Zealand and the United States. The School provides a five-year course for Assistant Medical Practitioners, a three-year course for Assistant Dental Practitioners, and shorter courses in laboratory technique, pharmacy, sanitation and radiography. Another example of regional co-operation in training is the West Indian Training Scheme, which enables the smaller Caribbean territories to send promising students to schools in Jamaica and Trinidad where more fully developed training centres exist. In the Federation of Malaya two model health clinics have been established to serve as centres for training field staff in all branches of rural health work. In Tanganyika a Medical Training Board co-ordinates training in all centres throughout the territory. In the Aden Protectorate two Health Service Training Centres for sub-professional staff were equipped in 1954 by a generous grant from the Nuffield Foundation. In the Northern Region of Nigeria the new Kano Medical School admitted its first group of students in April 1955.

NURSING

'Nursing is undertaken by a wide variety of persons with widely differing training. At an early date the only nurses were persons trained outside the territories, but it was soon realized that it would be necessary to draw largely on the local population if the need for nursing was to be met. Early training was undertaken by the regular medical and nursing staff.

'In the beginning it was found almost universally impossible to obtain female volunteers for training. Little by little the male nurses reached a higher level and at the same time, with the advance of female education and the weakening of prejudices, female nurses began to replace the male nurses. These latter began to receive some added training and became dressers, medical orderlies or, at the highest level, medical assistants. . . .'[1]

In many territories girls have been trained as 'community nurses', a term with approximately the same meaning as health visitor, public health nurse or district nurse. The duties of such nurses were described in the report of the Rushcliffe Committee:

'Ideally, the community nurse would be a nurse who had received, in addition to her training in general nursing, such instruction as would fit her to be a leader in a village community; to visit and attend patients in their homes and advise women about their household problems, the hygiene of the home and the care of children and infants; to conduct health propaganda among the village people; to inculcate the better use of local foodstuffs and better cooking methods; to watch over the health of the people in the houses she visits and to advise them about treatment; to visit schools, to inspect school children and to play a part in health education in schools, which is so

[1] *Analysis of Information on Public Health.* A/921 (United Nations, 1949).

important a foundation for inspiring the whole community with a new attitude to health matters; to assist in the work at the clinics, particularly in the child welfare clinic; and generally to be the exponent of better health for all in the community.'[1]

The number of Colonial student nurses in training in the United Kingdom is increasing rapidly and some 1,500 were taking general nursing, mental nursing or midwifery courses in 1954. After completing their basic training many either obtain additional qualifications, particularly in health visiting and other branches of public health nursing, or return immediately to take up senior appointments. Under the Colombo Plan Australia trains student nurses from the Federation of Malaya.

The training of nurses and midwives in the dependencies themselves is developing rapidly. The standard of training in the Gold Coast, Hong Kong, Singapore, the Federation of Malaya and Jamaica has been recognized by the General Nursing Council for England and Wales for reciprocal State Registration. Partial recognition towards State Registration has been granted to several training schemes and this acts as an incentive to the nurses themselves to work for higher standards and towards complete reciprocity. In Fiji a training course has been started with a standard equivalent to that of State Registration in New Zealand, and preliminary arrangements have been made with New Zealand for recognition of the course. The promotion of locally trained nurses to nursing sister posts is made increasingly possible by these improved standards of training. One-third of the total number of nursing sisters working in the Federation of Malaya are now locally trained; in Hong Kong one-quarter of the nursing sisters and one-third of the senior nursing sisters have been trained in the Colony; and in Singapore more than half the present hospital sisters, all the health sisters, and one of the hospital matrons are locally trained.

Schemes exist to encourage nurses trained in the United Kingdom dependencies to go to the United Kingdom for higher qualifications or special experience and in a number of territories, notably Trinidad, Barbados and Singapore, scholarships are awarded annually for this purpose. Other scholarships are also available to territorially trained nurses under the British Red Cross Society or the British Commonwealth and Empire Nurses War Memorial Fund; and higher qualifications, especially those of sister tutor, midwife teacher or health visitor tutor, have been obtained by Colonial nurses with the help of these scholarships.

INTER-TERRITORIAL ORGANIZATIONS

The South Pacific Health Service

In 1946 an agreement to establish a South Pacific Health Service was signed by the Government of Fiji, the Western Pacific High Commission (on behalf of the British Solomon Islands and the Gilbert and Ellice Islands) and the Governor-General of New Zealand, acting in respect of New Zealand's Island Territories. The agreement was later extended to include the Government of Tonga.

[1] *Report of the Committee on the Training of Nurses for the Colonies.* 1945. Cmd. 6672.

The South Pacific Health Service is supervised and controlled by the South Pacific Health Board. The Board's chief administrative officer and chairman is the Inspector-General, South Pacific Health Service, who is appointed by the United Kingdom Secretary of State for the Colonies in consultation with the New Zealand Government. Also on the Board are representatives of Fiji, the New Zealand Department of Health, the Western Pacific High Commission and the International Health Division of the Rockefeller Foundation (see p. 30).

The South Pacific Health Board helps participating administrations by, among other things, advising on all health matters within their territories; collecting and transmitting information regarding the incidence of disease and encouraging medical research; assisting in maintaining adequate medical, nursing and sanitary staff and advising on their training.

Full use is made by participating administrations of the Central Medical School, Suva (see p. 26), and the Medical Department of Fiji, for the training of assistant medical practitioners, laboratory technicians, sanitary inspectors, pharmacists and other auxiliary health personnel, and of the leprosy settlement at Makogai for the treatment of leprosy patients. A pool of medical officers, from which participating administrations draw on a system of transfer or secondment, is based on the headquarters of the South Pacific Health Service in Suva and a pool of nurses is based on New Zealand. Nurses of local origin trained in hospitals in their own islands are sent in limited numbers for special courses at the Nurses Training School, Suva.

The East Africa High Commission[1]

Much of the work of the East Africa High Commission, which was established in 1948, is concerned with the health of the people of East Africa. In 1952 the East African Standing Advisory Committee for Medical Research was set up to advise on the needs for medical research in the East African territories and the practical application of the results of such research and to keep under review the facilities for inter-territorial collaboration in research. The Committee in 1954 became the East African Council for Medical Research, which held its first meeting in Nairobi in January 1955. The East African Bureau of Research in Medicine and Hygiene, established in 1949 with headquarters in Nairobi, promotes co-operation in medical research and advises on policy. The East Africa Medical Survey, set up in 1949, shares headquarters at Mwanza in Tanganyika with the Filariasis Research Unit established in 1950. The Medical Survey seeks to obtain a complete assessment of the state of health and disease in East Africa, carries out research into the more important diseases and has launched pilot schemes of disease control. The East African Malaria Institute was set up at Amani in Tanganyika in 1950 and is now being expanded, with the aid of the World Health Organization and the United Nations Children's Fund, as a centre of research, planning and direction of control measures throughout East Africa. In addition to malaria pilot control schemes, the Institute has completed various studies of the mosquito vectors and the effects of insecticides and has trained Africans

[1]For an account of the work of the East Africa High Commission see COI Reference paper R.3034 of May 1955, *Regional Co-operation in British East Africa.*

and others in malaria control. An Inter-territorial Leprologist was appointed to the East African territories in 1947 to survey the prevalence of leprosy in East Africa and advise on remedial measures; plans for a regional leprosy research centre at Itesio in Kenya under the specialist's direction have been drawn up (see p. 10).

Research into trypanosomiasis and its vector, the tsetse fly, is carried out by the East African Tsetse and Trypanosomiasis Research and Reclamation Organization, which is based on Nairobi and has central research laboratories in Shinyanga, Tanganyika, and Sukulu, Uganda. The Yellow Fever Research Institute at Entebbe in Uganda became a unit of the East Africa High Commission in 1949 and the scope of its work was widened to include investigations into virus and rickettsial diseases in Zanzibar, Northern Rhodesia and Nyasaland as well as in the three East African territories. The Institute, now called the Virus Research Institute, is associated with the World Health Organization in work on yellow fever in Africa and in addition is carrying out research of international importance on poliomyelitis.

West Africa

Following a reorganization of medical research in West Africa, the West African Council for Medical Research was established in 1954 with headquarters in Yaba in Nigeria. The members of the Council are a chairman and two scientific representatives nominated by the United Kingdom Secretary of State for the Colonies, representatives of the four West African dependencies, a representative of University College, Ibadan, and a secretary who is also in charge of the Council's central laboratories at Yaba. The Council has absorbed the West African Virus Research Institute and has assumed responsibility for the Helminthiasis Research Unit at Kumba in the Southern Cameroons and the Hot Climate Physiological Research Unit at Oshodi, near Yaba. The Virus Research Institute, which was originally staffed and financed by the Rockefeller Foundation to research into yellow fever, has facilities for general work on virus diseases and is a World Health Organization influenza centre. Both the Helminthiasis Research Unit, studying worm diseases, and the Hot Climate Physiological Research Unit, which studies the physiological principles of everyday life under tropical conditions, were until 1954 superintended by the Nigerian Medical Department. The work of these units is to be expanded and the Council is also considering the formation of new units to work on other diseases.

The West African Institute for Trypanosomiasis Research, which undertakes research into all aspects of the human and animal disease, was formally opened in 1951. The work of the Institute is divided between two centres in the Northern Region of Nigeria and it is designed to serve the needs of all the four West African territories.

INTERNATIONAL ORGANIZATIONS[1]

The Health Section of the League of Nations, created in 1923, carried out work of value to the Colonial territories on malaria, sleeping sickness, leprosy, hookworm, the organization of public health services, the standardization of vaccines and in other fields. Similar functions, with greatly

[1]See COI reference paper R.3110 of February 1956, *International Colonial Co-operation.*

increased resources, are performed by the specialized agencies and other bodies of the United Nations.

United Nations Bodies

The World Health Organization (WHO) and the United Nations Children's Fund (UNICEF) give valuable assistance to the Colonial territories, mainly in the form of technical advice, expert staff, supplies and equipment, in connection with many projects concerned with health, and particularly maternal and child health. The dependencies benefit also from the efforts of the Food and Agriculture Organization (FAO) to raise levels of nutrition and standards of living. The United Kingdom is a member of these bodies and is represented at the conferences held under their auspices.

An impression of the scope of the activities of United Nations bodies in the United Kingdom dependencies can be gained from the projects initiated or carried forward in 1954. Projects in co-operation with the WHO Regional Offices, WHO providing technical advice and expert staff and UNICEF in many cases contributing supplies and equipment, included in 1954: malaria control in Northern Nigeria, North Borneo, Dominica and East Africa; insect control in St. Vincent; yaws control in Jamaica, Grenada, St. Vincent and Fiji; tuberculosis control in the Somaliland Protectorate and BCG vaccination of the child population of Lagos, Nigeria; a sanitation programme in St. Kitts; the provision and expansion of child welfare services in West and East Africa; and health education and training centres in Far Eastern territories. Seventeen WHO fellowships were awarded to members of medical staffs in a number of dependencies for the study of various health subjects in the United Kingdom and elsewhere.

UNICEF assistance was concentrated at first in the Far East and the Caribbean but recently its work has been extended to Africa. In 1954, as in other years, such assistance took the form of supplies and equipment for projects initiated in consultation with UNICEF and WHO; many of these were supplemented by technical advice and assistance provided by WHO. The largest category of projects assisted by UNICEF in 1954 was that of feeding programmes. Allocations for this purpose were made to Trinidad, British Guiana, St. Kitts, Antigua, Montserrat, St. Vincent, St. Lucia, Grenada and Dominica, and approved for Singapore and Sarawak. Maternity and child welfare projects were assisted in Kenya, Tanganyika, Uganda, Nigeria, Gold Coast, Singapore and North Borneo; supplies for an environmental sanitation scheme were made available in North Borneo. The Fund also in 1954 assisted with supplies and equipment for insect control in Trinidad and Dominica; malaria control in East Africa and North Borneo, and yaws control in the Federation of Malaya, Fiji, St. Vincent, Grenada and St. Kitts. Nigeria received dried milk supplies and assistance towards the construction of a milk processing plant. Tanganyika received emergency aid for famine relief.

The Rockefeller Foundation

The International Health Division of the Rockefeller Foundation has rendered great service to the cause of medicine throughout the tropics. Among many schemes in the Colonial territories financed and executed by

the Foundation before 1945 were hookworm campaigns in Malaya, Fiji and the Pacific Islands, work on yellow fever in Nigeria and Uganda, anti-yaws, anti-malaria and anti-venereal work in the West Indies, and the support given to the Medical School in Singapore (now part of the University of Malaya), to the Central Medical School in Fiji and to the establishment of a Health School in Jamaica. A Yellow Fever Research Institute was established in Uganda by the Rockefeller Foundation in co-operation with the East African territories and in Nigeria in co-operation with the West African territories. The Colonial Office took over the administration of the Uganda institute in 1949 and of the Nigeria institute in 1950 and the institutes have been renamed respectively the East African Virus Research Institute and the West African Virus Research Institute. In 1953 the Rockefeller Foundation established, again in co-operation with the territorial Government concerned, a Virus Research Laboratory in Trinidad; it is designed to serve the Eastern Caribbean region. In 1955 the Foundation made a five-year grant to the University College of the West Indies to expand the work of its medical faculty. An anti-malaria campaign in Tobago and studies of rabies in Nigeria and filariasis in West Africa have been among other projects assisted by the Foundation since the second world war.

The Commission for Technical Co-operation in Africa, South of the Sahara (CCTA[1])

CCTA was established in 1950 with headquarters in London. Its members are the United Kingdom, France, Belgium, Portugal, the Union of South Africa and the Federation of Rhodesia and Nyasaland, and the Commission holds half-yearly meetings in the territory of each of the six members in turn. The main function of CCTA is to further the exchange of information, technical equipment and staff; it co-operates closely with the specialized agencies of the United Nations and with the Overseas Committee of the Organization for European Economic Co-operation (OEEC), but unlike the United Nations agencies CCTA does not put additional funds at the disposal of its members.

The Commission has set up, in Leopoldville in the Congo, a Permanent Inter-African Bureau of Tsetse and Trypanosomiasis. The Bureau disseminates information about tsetse and trypanosomiasis, facilitates the interchange of visits between experts of different nationalities and maintains close contact with interested national and international bodies.

Much of the work of the Commission has a direct or indirect relevance to the development of public health. Activities sponsored by CCTA have included three meetings of the Inter-African Conference on Medical Co-operation (1946, 1951 and 1955), an Inter-African Conference on Medical Education (1951), surveys of developments in the field of nutrition and two meetings of the Inter-African Conference on Nutrition (1949 and 1952).

[1]The abbreviation is that of the French title of the Commission.

STATISTICAL APPENDIX

The following tables, prepared by the Colonial Office, show in statistical form the progress which has been made in recent years in the reduction of death and infant mortality rates (resulting in increased populations) and in the expansion of health services in the dependencies. Owing to the absence of data, African territories have not been included in Tables I and III; these tables give, however, a clear picture of improving health in a number of differing territories.

TABLE I

Decline in Deaths due to Parasitic or Infective Diseases[a] in Colonial Territories

		1947	1948	1949	1950	1951	1952	1953	1954	Last year as percentage of first year
Mauritius ..	Malaria ..	1,782	1,580	936	388	285	188	61	27	1·5%
	Tuberculosis	171	269	301	244	235	201	146	133	78%
	Other ..	413	2,089[b]	273	241	249	324	773[b]	402	98%
	Total ..	2,366	3,938	1,510	873	769	713	980	562	24%
Jamaica ..	Malaria ..	626	608	616	427	482	(c)	578	(c)	92%
	Tuberculosis	919	966	842	844	777	(c)	576	(c)	63%
	Other ..	1,197	1,071	925	926	976	(c)	768	(c)	64%
	Total ..	2,742	2,645	2,383	2,197	2,235		1,922		70%
British Guiana ..	Malaria ..	290	172	109	66	31	28	3	1	0·3%
	Tuberculosis	175	217	(c)	205	178	168	147	116	66%
	Other ..	562	406	(c)	(c)	(c)	341	(c)	265	21%
	Total ..	1,027	795				537		382	37%
Trinidad ..	Malaria ..	217	177	152	141	138	80	74	64	29%
	Tuberculosis	567	572	556	503	441	362	317	277	49%
	Other ..	445	324	283	265	303	306	215	273	61%
	Total ..	1,229	1,073	991	909	882	748	606	614	50%
Malaya (Federation)	Malaria ..	2,169	1,301	1,184	1,011	912	1,256	598	941	43%
	Tuberculosis	4,169	3,806	3,549	3,434	3,135	2,462	1,952	1,825	44%
	Other ..	3,402	2,025	1,750	1,807	1,569	1,604	1,486	1,446	42%
	Total ..	9,740	7,132	6,483	6,252	5,616	5,322	4,036	4,212	43%
Cyprus ..	Malaria ..	—	—	—	—	—	—	—	—	—
	Tuberculosis	(c)	(c)	(c)	80	57	41	25	23	29%
	Other ..	(c)	(c)	(c)	56	55	44	22	30	54%
	Total ..				136	132	85	47	53	39%

(a) Excluding influenza.
(b) Epidemic of whooping cough.
(c) Not available.

TABLE II

Expansion of Health Facilities in Colonial Territories 1950–1954

	Mid-year Population		Expenditure of Medical Department[a]		Number of Hospital Beds		Number of Registered Physicians	
	1954	Increase on 1950	1954[b]	Increase on 1950	1954	Increase on 1950	1954	Increase on 1950
	000		£000		000			
Gold Coast	4,478[c]	7%	2,036	112%	3·0[c]	11%	180[c]	46%
Sierra Leone ..	2,000[d]	8%	461	97%	1·1[c]	10%	57[c]	4%
Nigeria	31,500[c]	9%	890[e]	35%	12·2[c]	20%	483[c]	41%
Kenya	5,947	6%	1,408	77%	9·0[d]	43%	556	58%
Uganda	5,425	6%	1,153	107%	6·5[d]	14%	194[g]	40%
Tanganyika	8,196	6%	1,326	94%	10·7	12%	354[g]	42%
Northern Rhodesia	2,071	9%	1,200[d]	129%	5·0	72%	193	45%
Malaya (Federation)	5,889	12%	2,118	110%	26·0[d]	36%	716	35%
Singapore	1,168	6%	2,453	147%	5·6[f]	37%	454[h]	63%
Hong Kong	2,277	0	1,733	132%	4·7	20%	719[h]	45%
Barbados	225	8%	355	64%	1·6	60%	56	25%
British Guiana ..	453	12%	856	65%	5·0[d]	43%	153	60%
Jamaica..	1,518	8%	1,612	69%	6·0[d]	54%	406	19%
Trinidad	698	10%	1,672	61%	4·0[d]	44%	246	46%
Cyprus	514	6%	579	167%	1·8[d]	80%	53	0
Mauritius	530	14%	740	120%	3·2	60%	90	3%

(*a*) Including non-recurrent and extraordinary expenditure; the amount is normally small compared with the recurrent expenditure.
(*b*) 1954 or 1954/5. These are revised estimates; the increase over actual expenditure in 1950 or 1950/51 is thus slightly inflated.
(*c*) 1953.
(*d*) Estimate.
(*e*) Federal expenditure only.
(*f*) Government hospitals only.
(*g*) Comparison with 1951.
(*h*) "Doctors".

TABLE III

Decline in Infant Mortality Rates in Colonial Territories

	(1) Average 1935–39	(2) Average 1950–54	(2) as percentage of (1)
Malaya (Federation)	148·8	91·1	61%
Singapore	154·0	70·1	46%
Cyprus	121·8	56·3	46%
Malta	233·9	78·4	34%
Bahamas	113·8	81·5	71%
Barbados	209·6	131·0	63%
Bermuda	59·7	55·0	92%
British Guiana	129·2	80·1	62%
British Honduras	140·0	92·1	66%
Jamaica	127·4	72·8	57%
Trinidad	103·6	75·6	73%
Fiji	93·1	56·8	61%
Mauritius	151·2	83·1	55%

TABLE IV

Population Increases in Colonial Territories

Territory	Date	Population[a]	Date	Population[b]
		'000		'000
Somaliland Protectorate	1921	352	1952	640
Kenya	1921	2,535	1954	5,947
Uganda	1921	3,000	1954	5,425
Tanganyika	1921	4,117	1954	8,196
Zanzibar and Pemba	1924	200	1953	274
Northern Rhodesia	1921	1,000	1954	2,072
Nyasaland	1921	1,200	1954	2,484
Gambia	1921	200	1954	280
Gold Coast (including Togoland)	1921	2,300	1955	4,619
Nigeria (Federation)	1921	19,000	1954	31,800
Sierra Leone	1921	1,500	1952	2,000
Singapore (excl. Dependencies)	1921	420	1955	1,211
Malaya (Federation)	1921	2,907	1955	6,059
Brunei	1921	25	1953	53
North Borneo	1921	257	1953	355
Sarawak	1939	491	1954	602
Hong Kong	1931	850	1954	2,277
Cyprus	1931	348	1954	514
Gibraltar	1921	19	1954	25
Malta and Gozo	1921	212	1954	320
Bahamas	1921	53	1954	90
Barbados	1921	155	1954	225
Bermuda	1921	20	1954	40
British Guiana	1921	298	1954	472
British Honduras	1921	45	1954	77
Jamaica (excl. Dependencies)	1921	873	1953	1,532
Trinidad	1921	367	1954	698
Leeward Islands	1921	85	1954	124
Windward Islands	1921	200	1954	304
Fiji	1921	157	1954	328
Gilbert and Ellice Islands	1931	34	1954	39
New Hebrides	(c)	—	1954	53
British Solomon Islands	1931	94	1953	99
Tonga	1939	34	1954	54
Falkland Islands	1921	2	1954	2
Aden (Colony and Perim)	1921	57	1954	150
St. Helena (excl. Dependencies)	1931	4	1954	5
Mauritius (excl. Dependencies)	1921	382	1954	530
Seychelles	1921	24	1954	37

(*a*) The totals for African territories are mainly estimates.
(*b*) Latest mid-year estimate.
(*c*) No information available.

TABLE V

Expectation of Life in Colonial Territories

Territory and date	Age in Years								
	0	5	10	20	30	40	50	60	70(*c*)
Cyprus (1948–50):									
Male	63·6	64·9	60·3	50·9	41·8	32·9	25·0	16·9	11·0
Female	68·8	70·1	65·4	55·8	46·4	37·2	28·2	19·5	11·7
Malta and Gozo (1948):									
Male	55·7	61·8	57·5	48·4	39·7	30·8	22·4	15·9	10·5
Female	57·7	63·5	58·8	49·6	40·7	32·2	23·4	16·7	11·1
Barbados (1945–47):									
Male	49·2	56·4	51·8	42·7	34·2	26·0	18·8	13·2	8·8
Female	52·9	60·4	55·8	46·8	38·5	30·4	22·8	15·8	10·0
British Guiana (1945–47):									
Male	49·3(*a*)	51·9	47·6	38·7	30·7	23·0	16·5	11·1	7·5
Female	52·0(*a*)	54·0	49·8	41·3	34·4	27·3	20·2	14·2	9·2
British Honduras (1945–47):									
Male	45·0	50·7	46·9	38·8	31·7	25·3	19·0	13·2	7·8
Female	49·0	53·7	50·0	42·2	35·7	29·2	22·6	15·9	10·0
Jamaica (1945–47):									
Male	51·2	55·0	50·8	41·9	34·0	26·4	19·5	13·6	8·4
Female	54·6	57·8	53·6	45·1	37·8	30·3	23·0	16·3	10·2
Leeward Islands (1946):									
Male	50·0	(*b*)	50·2	41·2	33·2	26·1	19·2	(*b*)	(*b*)
Female	54·8	(*b*)	54·4	45·6	37·8	29·9	22·7	(*b*)	(*b*)
Trinidad & Tobago (1945–47):									
Male	53·0	54·5	50·1	41·2	33·1	25·3	18·3	12·5	8·2
Female	56·0	56·9	52·4	43·8	36·2	28·7	21·5	15·4	10·1
Mauritius (1952):									
Male	49·8	53·7	49·2	40·1	31·6	23·6	16·7	11·2	6·7
Female	52·3	56·5	52·2	43·7	36·2	28·8	21·2	14·6	9·1

(*a*) An approximate calculation for 1952 gives an increase of four years.
(*b*) Not available.
(*c*) These statistics are unreliable.

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